and clothing. But there are not wanting who say, the Pasha only supports it to raise up for himself good officers; however, it is good in itself, and the results must be good, and I give him credit for it. I consider the principal points in his character to be ambition, and the vanity of appearing a great and enlightened prince in the eyes of Europe, and I think these will explain his whole policy. He has had the tact to win our representative, Colonel Campbell, completely to his interests, and the good Colonel is his warmest and most enthusiastic eulogist.

III.—*Characters of three New Species of Indian Fresh-water Bivalves, by* Isaac Lea; *with Notes by* W. H. Benson, *Esq.*

While our countrymen in India are hesitating to name or to describe as novelties their acquisitions in Natural History, under the apprehension of re-describing that which may be already known to the scientific world, our brethren of the United States are forestalling us, and are publishing in that distant land the acquisitions of their fellow citizens, made under the unfavorable circumstances which generally attach to cursory and hurried journeys through a country. It becomes us, then, to bestir ourselves, and not thus tamely to allow prizes to be carried off from our very doors, to swell the scientific triumphs of our transatlantic competitors.

The following descriptions of three species of *Unio* are taken from the 4th volume of the Transactions of the American Philosophical Society, in which work characteristic figures are given of each shell. The characters are from the pen of Mr. Isaac Lea, who has acquired perhaps a greater knowledge of the species of this genus, and has described more new ones than any other individual. Having during several years attended particularly to this department of Natural History, and taken numerous specimens of the shells procurable in the provinces, in which I have resided, I have ventured to add a few illustrative notes. Besides Mr. Lea's three species, and the well known *Unio marginalis* of Lamarck, I am acquainted with three other perfectly distinct species of *Unio* from the streams of the Bengal and Agra presidencies, which I propose to describe in a separate paper.—W. H. B.

Unio Cæruleus. Plate XIII. fig. 25. of Am. Phil. Trans. IV.

"*Testâ angusto-ellipticâ, transversâ, inæquilaterali, subcylindraceâ; valvulis tenuibus; natibus prominulis, rotundatis et undulatis; dentibus cardinalibus lamelliformibus, et in dextrâ valvula solâ duplicibus; lateralibus rectis; margaritâ cæruleo-albâ et iridescente.*

" Shell narrow-elliptical, transverse, inequilateral, subcylindrical; valves thin; beaks rather elevated, rounded and undulated; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight; nacre bluish white, pearly and iridescent.

Hab. River Hoogly, Hindostan, G. W. Blakie.

Diam. ·6, Length ·8, Breadth 1·6 inches.

" Shell narrow-elliptical, transverse, subcylindrical, disposed to be straight on the sides and basal margin; substance of the shell thin; beaks near the anterior margin rounded, somewhat elevated, and corrugated with diverging undulations; ligament rather short and straight; epidermis finely wrinkled and bluish green, particularly on the posterior part; rays very indistinct; posterior slope furnished with small undulations and two irregular rays on each side; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the beaks wide and rounded; nacre bluish white, very pearly and iridescent.

" *Remarks.*—This species was brought from Calcutta by Mr. Blakie, to whose kindness I am indebted for it and many other fine shells. As far as I have been able to ascertain, it has not been described. From the roughness of the beaks it might perhaps be thought to be only a variety of *corrugata* (Lam.). On comparing the two species, however, they will be found to be entirely distinct; the *corrugata* being " ovato-rhombeâ," while the *cæruleus* is " angusto-ellipticâ." In some specimens the nacre is slightly rose-coloured along the basal margin."

Note.—This shell is extremely common in tanks in the vicinity of Calcutta, and is met with in profusion in the Ganges, Jumna, and their branches. The epidermis is ordinarily brown, and I have only met with the dark-green variety figured and described by Mr. Lea in jhíls in Bundelkhand. It varies much in diameter, being sometimes extremely ventricose, while another frequent variety is remarkable for the smallness of its diameter. All the varieties may be at once referred to this species, by attending to the generally polygonal outline of the posterior part of the shell, and to the rugæ on the beaks and slopes, which radiating in two different sets, form by this junction on the back of the shell, in fine specimens, a series of acute angles. The shallow variety above-mentioned, which has a paler green epidermis, and which is somewhat alate posteriorly, shews this character, in the greater perfection. The extreme varieties would be regarded as distinct species, if alone presented for examination; but I possess a beautiful series which connects them so gradually as to leave no doubt of their identity as a species. My largest specimen, which is an odd valve, is 1·95 inches in breadth. The nacre is occasionally tinged with salmon colour.—W. H. B.

Symphynota Bilineata. Plate XI. fig. 19, of ditto.

" *Testâ subelliptică, transversâ, inæquilaterali, compressâ ; valvulis tenuissimis ; posteriori margine dorsali elevatâ connatâque ; natibus subprominulis, undulas concentricas et duas lineas elevatas ad marginem posteriorem currentes, habentibus ; dentibus cardinalibus laminatis et in valvulâ dextrâ solum duplicibus ; lateralibus rectis ; margaritâ colore salmonis subtinctâ.*

" Shell subelliptical, transverse, inequilateral, compressed ; valves very thin ; posterior dorsal margin elevated and connate ; beaks very slightly elevated, concentrically undulate and possessing two elevated lines which pass to the posterior margin ; cardinal teeth lamelliform and double in the right valve only ; lateral teeth straight ; nacre slightly salmon coloured.

Hab. River Hoogly, Hindostan, G. W. Blakie.

Diam. ·3, Length ·7, Breadth 1·3 inches.

" Shell subelliptical, transverse, inequilateral, compressed, diaphanous ; substance of the shell extremely thin ; beaks very slightly elevated, concentrically undulated, possessing two small elevated lines which pass (posterior to the umbonial slope) to the posterior margin ; valves elevated into a carina and connate in the posterior dorsal margin : dorsal margin a right line ; ligament very small ; epidermis shining, greenish yellow, darker on the posterior slope ; cardinal teeth lamelliform and double in the *right* valve only ; lateral teeth lamelliform, long and straight ; posterior and anterior cicatrices both confluent ; dorsal cicatrices obsolete ; cavity of the beaks shallow, very wide, and exhibiting the undulations of the beaks ; nacre very thin and slightly salmon coloured, darker in the cavity of the beaks.

" *Remarks.*—This very small species was brought from Calcutta by Mr. Blakie, with the *U. cæruleus* (Nob.). Both were procured about one hundred miles above that city. It resembles, in its outward characters, the young of *S. cygnea* (*Anod. cygnea*, authors). It is, however, more transverse, and differs altogether in the formation of the hinge, which is furnished with perfect cardinal and lateral teeth. In the peculiar character of the *double tooth* in the *right* valve, it resembles the *S. ochracea**. The *bilineata* is easily distinguished by the two delicate lines which pass from the beaks to the posterior margin."

Note.—This species, which is tolerably abundant in the tank on the skirts of the southern glacis of Fort William, is an *Unio* to all intents and purposes. Mr. Lea's genus *Symphynota* is founded on an adventitious character which is incidental to most of the winged bivalves. It culls from various genera, such as *Unio* and *Anodon*, (already well separated on the best of all distinctive characters for bivalves, the difference of the teeth,) species, which otherwise agree with their respective genera, to unite them in one unnatural group. Mr. Lea's apology for its introduction, viz. the difficulty of defining

* See vol. iii. p. 455.

the boundaries of the genera of the *Naiadæ*, can hardly justify its adoption. The assumption that genera are separated in nature by an hiatus has been ably combated by the zoologists of our present English school. Genera melt into each other, and the circumstance of the flanking individuals of each cohort being in contact does not militate against their grouping round the standards which form their rallying points. Mr. Lea has named this shell from a character which exists only in young specimens, and which is also observable in a distinct and interesting species *(U. Theca*, Mihi), of which I possess an unique example from the river Cane in Bundelkhand. The largest specimen of *Unio bilineatus* in my possession, is in breadth, 2.3 inches. The adult shell has a brown epidermis inclining to fulvous towards the basal margin, and occasionally the anterior side inclines to form a wing as well as the posterior. Mr. Lea gives as a character, cardinal teeth "double in the right valve only;" but in every specimen which I possess, a thin lamina parallel with the principal lobe of the cardinal tooth, is more or less developed in the left valve, and interlocks with those on the right; and it is this double lamina in the left valve which forms one of the most valuable distinctions between the adult *bilineatus* and the occasionally symphynotous young of *Unio marginalis*, which has no trace of a double lamina in the left valves. The concentric undulations, on the beaks, which are also observable in the young of *U. marginalis*, also disappear in the adult *bilineatus*.—W. H. B.

Unio Olivarius. Plate XVI. fig. 38, of ditto.

" Testâ ovatâ, transversâ inflatâ, pellucidâ ; valvulis pertenuibus ; natibus prominulis ; epidermide pertenui, lævi et olivæ colorem habente ; dentibus cardinalibus magnis laminatis erectisque lateralibus laminatis brevibusque ; margaritâ pertenui albâque.

" Shell ovate, transverse, inflated, pellucid; valves very thin; beaks slightly elevated; epidermis olive, very thin and smooth. Cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform; nacre very thin, white and pearly.

Hab. Burrill river, India, Dr. Burrough.

Diam. ·7, Length ·8, Breadth 1·5 inches.

" Shell ovate, transverse, inequilateral, inflated, pellucid : substance of the shell very thin; beaks slightly elevated, rounded and devoid of undulations: ligament very small: epidermis olive, very thin and smooth: rays obscure, cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform: anterior cicatrices slightly confluent: posterior cicatrices confluent: dorsal cicatrices not perceptible; cavity of the beaks wide; nacre very thin and bluish white.

" *Remarks.*—This interesting little shell is from the fine collection made by Dr. Burrough, during his travels in India, and I am indebted to his

kindness for the specimen figured. It is a perfectly distinct species, and may easily be recognised by its form, its pellucidness, and its smooth olive-coloured epidermis. It somewhat resembles a young *Anodonta* on the exterior, but the elevated lamelliform teeth easily distinguish it from that genus. Its resemblance to a Spanish olive is very striking."

Note.—This shell, which Lieutenant Hutton, (vol. iii. J. A. S.) refers with doubt to the young of *U. marginalis**, from which it is perfectly distinct, is abundant in the shallow pools left on the sands of the Jumna and Ganges after their periodical rise. I have never met with a larger specimen than that figured by Mr. Lea. The colour of the epidermis varies from a pale clear green to a pale brown.

In concluding these notes on Mr. Lea's interesting descriptions, I may observe, that the Asiatic Society is indebted to him for a series of American fresh-water shells, chiefly *Uniones*, of which a list was published in the J. A. S. vol. i. and for a copy of his Observations on the genus *Unio*, printed in 1829.—W. H. B.

IV.—*Description of the Bearded Vulture of the Himálaya.* By B. H. Hodgson, *Esq. Resident in Nipal.*

Ordo Raptores—Fam. Vulturidæ.

Genus *Gypaëtos.*

Rostrum rectum ; basi plumis setaceis antrorsum directis tectum ; suprà rotundatum ; mandibula inferior, basi fasciculo, plumis rigidis elongatisque ornata ; cera plumis tecta ; tarsi breves, plumosi.

Species—*Barbatus*, Lin.

Synonyma.—*Vultur barbatus, necnon barbarus*, Lin. *Vultur aureus*, Gesner. *Nisser or Golden Eagle*, Bruce. *Bearded Vulture*, Edwards. *Lammer Geyer* of the Swiss, Shaw. *Father Long-beard* of the Arabs of Egypt, Bruce. The Bearded Vulture of the Himálaya, so familiar a tenant of the western portion of these mountains, nor yet unknown to, though much less common in, the eastern or Nipalese division of them, seems to have escaped the research of Hardwicke, and of Gould's contributors. There is no delineation of it in either the Century of the latter, or in the Illustrations of the former gentleman. It has also escaped the active and enlightened inquiries of the Zoological Journal, notwithstanding the startling, and, I fancy, exaggerated, notice of it contained in Heber's popular narrative. On these grounds, I am induced to forward to the Asiatic Society a draw-

* Lieutenant Hutton asks if it can be the young of his *Unio*, No. 18, of which the specimens deposited in the Museum Asiatic Society are *U. marginalis*.—Lamarck.